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IS 8988 (1978): Bauxite powder for foundry washes [MTD 14: Foundry]



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*Indian Standard*  
SPECIFICATION FOR  
BAUXITE POWDER FOR FOUNDRY WASHES

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**INDIAN STANDARDS INSTITUTION**  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

# *Indian Standard*

## SPECIFICATION FOR BAUXITE POWDER FOR FOUNDRY WASHES

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Foundry Auxiliary Materials Subcommittee, SMDC 17:5

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Jamshedpur

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SHRI P. D. BAJORIA J. D. Jones & Co Ltd, Calcutta  
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# *Indian Standard*

## SPECIFICATION FOR BAUXITE POWDER FOR FOUNDRY WASHES

### 0. FOREWORD

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 14 December 1978, after the draft finalized by the Foundry Sectional Committee had been approved by the Structural and Metals Division Council.

**0.2** The bauxite powder is prepared by first calcining the bauxite to above 1400°C to reduce shrinkage and then crushing the calcined bauxite to the desired fineness.

**0.2.1** Bauxite powder is normally used for making the bauxite wash for painting the cores and moulds made out of bauxite sand ( *see* IS : 8228-1976\* ).

**0.3** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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### 1. SCOPE

**1.1** This standard covers the requirements for bauxite powder for use in foundries for preparation of core and mould washes.

### 2. SUPPLY OF MATERIAL

**2.1** General requirements relating to the supply of bauxite powder shall be as laid down in IS : 1387-1967‡.

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\*Specification for bauxite sand.

†Rules for rounding off numerical values ( *revised* ).

‡General requirements for the supply of metallurgical materials ( *first revision* ).

### **3. MOISTURE CONTENT**

**3.1** Moisture content of bauxite powder when tested in accordance with the method given in IS : 1918-1966\* shall not exceed 1.0 percent.

### **4. CHEMICAL COMPOSITION**

**4.1** Bauxite powder shall have the following composition on dry weight basis, when tested in accordance with the procedure specified in IS : 2000-1962†.

<i>Constituent</i>	<i>Requirement, Percent</i>
Al <sub>2</sub> O <sub>3</sub>	75 <i>Min</i>
Fe <sub>2</sub> O <sub>3</sub>	5 <i>Max</i>
CaO + MgO	1 <i>Max</i>
TiO <sub>2</sub>	10 <i>Max</i>
SiO <sub>2</sub>	10 <i>Max</i>
Alkalis	0.5 <i>Max</i>
Loss on ignition	0.5 <i>Max</i>

### **5. FUSION POINT**

**5.1** When tested in accordance with IS : 1528 ( Part I )-1974‡ the PCE value of bauxite powder shall be not below standard pyrometric cone ( ASTM ) No. 35 ( 1800°C ).

### **6. GRAIN SHAPE**

**6.1** When tested in accordance with IS : 1918-1966\*, the grains shall be angular to subangular.

### **7. GRAIN FINENESS**

**7.1** When tested in accordance with the method given in IS : 1918-1966\*, 60 percent of bauxite powder shall pass through 150-micron IS Sieve ( see IS : 460-1962§ ) and at least 95 percent shall pass through 75-micron IS Sieve.

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\*Methods of physical tests for foundry sands.

†Methods of chemical analysis of bauxite.

‡Methods of sampling and physical tests for refractory materials: Part I Determination of pyrometric cone equivalent ( PCE ) or softening point ( *first revision* ).

§Specification for test sieves ( *revised* ).



**7.2** If required bauxite powder of coarser variety may also be supplied subject to the agreement between the purchaser and the manufacturer.

NOTE — The aperture of BS Sieve 100 and 200 and ASTM Sieve 100 and 200 ( also known as 149 $\mu$  and 74 $\mu$  US Standard Sieve respectively ) are within the limits laid down for the specified IS Sieves and may, therefore, be used as 150-micron and 75-micron IS Sieves respectively.

## **8. PACKING**

**8.1** Unless specified otherwise, bauxite powder shall be supplied in polythene lined gunny bags each containing 50 kg.

## **9. SAMPLING**

**9.1** Representative samples drawn and the criteria for conformity for various requirements shall be as given in Appendix A.

## **10. MARKING**

**10.1** The bags containing bauxite powder shall be clearly marked with the supplier's name or trade-mark.

**10.1.1** The material may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution ( Certification Marks ) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

# **APPENDIX A**

( Clause 9.1 )

## **SAMPLING OF BAUXITE POWDER IN BAGS**

### **A-1. LOT**

**A-1.1** In any consignment, all the bags of material manufactured under similar conditions shall be grouped together to constitute a lot.

**A-1.1.1** Samples shall be taken and tested from each lot for ascertaining the conformity of the lot.

**A-2. SCALE OF SAMPLING**

**A-2.1** The number of bags to be selected from each lot, shall be according to col 1 and 2 of Table 1.

**TABLE 1 SCALE OF SAMPLING**( *Clauses A-2.1 and A-3.1* )

LOT SIZE ( NUMBER OF BAGS IN A LOT )	SAMPLE SIZE ( NUMBER OF BAGS TO BE SELECTED )
(1)	(2)
Up to 50	5
51 to 150	8
151 to 300	13
301 and above	20

**A-2.1.1** The bags shall be selected at random. In order to take the bags at random, the provisions given in IS:4905-1968\* may be followed.

**A-3. PREPARATION OF TEST SAMPLES**

**A-3.1** From each of the bags selected according to col 1 and 2 of Table 1, with the help of a suitable sampling instrument adequate quantity of material shall be taken. This material shall be taken from different parts of the bag. Material taken from different bags shall be mixed to form a composite sample representing the lot. The composite sample thus obtained shall be divided into three equal parts and kept in an air tight container. One sample is for the supplier, one for the buyer and the third shall be kept as a referee sample.

**A-4. NUMBER OF TESTS AND CRITERIA FOR CONFORMITY**

**A-4.1** Tests for moisture, chemical composition, fusion point, grain shape and grain fineness shall be conducted on the sample obtained according to **A-3.1**.

**A-4.2** The lot shall be declared as conforming to the specification, when the sample tested for different characteristics ( *see A-4.1* ) conform to relevant requirements of the specification.

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\*Methods for random sampling.

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# INDIAN STANDARDS

## ON

## FOUNDRY

IS :

- 1280-1975 Foundry moulding boxes of steel construction ( *second revision* )
- 1305-1967 Graphite for use as foundry facing material ( *second revision* )
- 1513-1971 Pattern equipment for foundries ( *first revision* )
- 1752-1973 Coal dust for use in cast iron foundry ( *second revision* )
- 1811-1961 Methods of sampling foundry sands
- 1918-1966 Methods of physical tests for foundry sands
- 1987-1974 High silica sand for use in foundries ( *first revision* )
- 3339-1975 Silica flour for use in foundries ( *first revision* )
- 3343-1975 Natural moulding sand for use in foundries ( *first revision* )
- 3666-1966 Tests for foundry core oils requiring baking
- 4140-1967 Limestone for use in foundries
- 4269-1967 Dextrin for use in foundries
- 4475-1975 Crane-suspended hand-operated geared ladles for iron foundries ( *first revision* )
- 4476-1975 Crane-suspended hand-operated geared ladles for steel foundries ( *first revision* )
- 4604-1975 Pattern plates for machine moulding boxes ( *first revision* )
- 4606-1968 Steel shot for use in foundries
- 4683-1968 Chilled iron shot and grit for use in foundries
- 4981-1975 Guide pins for foundry pattern plates ( *first revision* )
- 4982-1975 Closing pins for foundry moulding boxes ( *first revision* )
- 5032-1975 Recommended sizes of cupola furnace for foundry ( *first revision* )
- 5303-1974 Zircon flour for use in foundries ( *first revision* )
- 5824-1970 Lancets for use in foundries ( *first revision* )
- 5841-1970 Fluted core cleaners for use in foundries
- 5850-1970 Star ( triangular ) cutters for use in foundries
- 5873-1970 Steel cut-wire shots for use in foundries
- 5904-1970 Chaplets for use in foundries
- 5981-1970 Sleekers for use in foundries
- 5988-1970 Spring dowel sleeves ( light and heavy patterns ) for use in foundries
- 6013-1970 Trowels for use in foundries
- 6366-1971 Sprue plugs for use in foundries
- 6376-1971 Pattern lifting pins and hooks for use in foundries
- 6377-1971 Mallets for use in foundries
- 6378-1971 Pattern lifting and rapping plates
- 6401-1971 Dowel pins for use in foundries
- 6443-1971 Lifters and cleaners for use in foundries
- 6447-1971 Vent wires for use in foundries
- 6482-1971 Tampers and rammers for use in foundries
- 6773-1973 Sodium silicate for use in foundries
- 6788-1973 Chromite sand for use in foundries
- 7295-1974 Chamotte
- 7297-1974 Olivine sand and flour for use in steel foundries
- 7547-1974 Steel nails used as internal chills in steel casting
- 8228-1976 Bauxite sand
- 8246-1976 Liquid resins for use in shell process in foundries
- 8250-1976 Foundry parting agents